Managing Mass Medical Emergency Evacuations by Air Ambulances

Sammy M. Wills
Fellow of 2006

WCMT

Yorkshire Ambulance Service NHS Trust
Contents

1. Abstract ..... 3
2. Introduction ..... 4
3. Discussion ..... 4

3.1 Germany Munich
3.1.1 EHAC ..... 5
3.1.2 ADAC ..... 5

3.2 USA New Orleans
3.2.1 Acadian ..... 8

3.3 USA Washington
3.3.1 MedSTAR ..... 11
3.3.2 FEMA ..... 14

3.4 Australia Sydney
3.4.1 Lifesaver 1 ..... 15
3.4.2 NSW Counter Disaster Unit ..... 18

3.5 Australia Cairns
3.5.1 Royal Flying Doctor Service ..... 19

3.6 New Zealand Hamilton
3.6.1 Westpac Waikato ..... 20
3.6.2 St. John ..... 22

3.7 Thailand Bangkok
3.7.1 Red Cross ..... 23

3.8 United Kingdom Leeds
3.8.1 Yorkshire Air Ambulance ..... 24

4. Summary and Conclusions ..... 31
5. Recommendations ..... 32
6. Executive Summary ..... 33

7. Appendices
7.1 Acknowledgements and contact list ..... 34
7.2 World map ..... 35
7.3 Travel itinerary ..... 36
7.4 Acadian Newspaper article inc. FEMA ..... 37
7.5 Acadian Disaster Plan – post Hurricane Rita ..... 38
7.6 Winston Churchill Memorial Trust ..... 43
7.7 HEMS aircraft chart ..... 43
7.8 Abbreviations / definitions ..... 44
7.9 Web site addresses ..... 44
7.10 References ..... 45
7.11 Thank you ..... 45
1. Abstract

WINSTON CHURCHILL MEMORIAL TRUST FELLOWSHIP AWARD

NAME
Samantha M. Wills    Aircrew Paramedic – Yorkshire Air Ambulance – Seconded from YAS

PROJECT TITLE
Managing Mass Medical Emergency Evacuations by Air Ambulances (MEA project)

DATES & DURATION
24th April – 6th June 2006    6 weeks

MEANS OF TRAVEL
By air & then local travel including:
Assisted by host, coach, train, bus, underground, car hire and walking.

COUNTRIES & CITIES
Germany    Munich
United States    New Orleans, Lafayette, Washington DC.
Australia    Sydney, Cairns
New Zealand    Hamilton
Thailand    Bangkok, Phuket

PROJECT
My primary objective is to make recommendations for multiple evacuations by air at major incidents in the United Kingdom. To be as up to date as possible I needed to meet with professionals who have recently implemented their emergency plans, and discuss the lessons learned and the changes they will now make. The focus will be on the multiple use of helicopters in real time and the immediate prevention of air accidents. Plus how would their responses differ between natural disasters and multiple terrorist attacks?

FOLLOW-UP
Initially my Churchill Fellowship report can be made available to all emergency professionals at my base at the Yorkshire Air Ambulance (YAA). It will be given to the Northern Consortium of the Confederation of Helicopter Ambulance Services (CHAS) and will be made available to the British Helicopter Advisory Board (BHAB) and the Department of Health. The report will also be presented to sponsoring bodies and any local community who request a presentation.

PROFESSIONAL QUALIFICATIONS
2006    Institute of Leadership and Management Diploma – Sheffield Hallam University
2006    Thrombolysis – West Yorkshire Ambulance Service
2005    Advanced Life Support (ALS Provider - Resuscitation Council UK)
2004    SORT – Special Operations Response Team - Yorkshire Region
2003    Faculty member of The Royal College of Surgeons Edinburgh, Emergency Medical Rescue
2002    JAR Ops 3 – Helicopter Emergency Medical Services (HEMS)
2001    Paediatric Advanced Life Support (PALS Provider - Resuscitation Council UK )
1998    State Registered Paramedic – Registration Number SRPara PA1132
2. Introduction

Having benefited from excellent training, and eleven years accident and emergency experience, my qualifications currently include: State Registered Paramedic (SRp), Advanced Life Support (ALS), Fast Response Vehicle (FRV) and Helicopter Emergency Medical Service (HEMS) trained. Eight years as a Paramedic, including four as an aircrew member with ‘The Yorkshire Air Ambulance Charity’. I am able to make good clinical judgements and am committed to achieve a high level of performance within agreed policies and procedures. I am able to make decisions under pressure and enjoy working best in a small team.

My history in this work began with a successful secondment from ‘South Yorkshire Ambulance Service NHS Trust’ (SYAS) to ‘The Yorkshire Air Ambulance Charity’ (YAA) in 2002. My additional duties included looking at the role of the air ambulance in a major accident (Majax).

My findings concluded that there was no national guidelines in the use of multiple aircraft attending a mass casualty situation.

My Father is the secretary / treasurer of The West Midlands branch of The Winston Churchill Fellowship having become a Churchill Fellow in 1990. He made me aware of the 2006 category of ‘Disaster and Emergencies’ and thanks to the support of YAA, SYAS and Winston Churchill Memorial Trust I was able to pursue a ‘Trip of a life time’ and investigate a subject dear to my heart….

“Managing Mass Medical Emergency Evacuations by Air Ambulances”

It is required as part of my lifelong membership to the fellowship to produce this report to disseminate my findings. My method was to interview and meet with fellow paramedics who had been involved in the above scenario and to discuss the ramifications of lessons learned from the ‘Emergency Planners’. By working alongside these same people (in an ‘observer only’ capacity) I learned many, many more lessons. The 45 day trip in April - June 2006 included 18 cities and 16 flights, involving 76 hours flying time of which approx 3 were with HEMS.

Not being skilled as a writer, I do not feel these written words will be able to justify and exemplify all the lessons and experiences learned. For this reason I have no hesitation in adding my email address sammy.wills@syas.nhs.uk for any further questions or clarification.

3. Discussion

It may be usual to put the most important facts first, however to make matters simple, sub headings have been used in each country’s findings in the hope of a logical format.

I begin with a brief introduction of the Service visited followed by observations made. Firstly relating to my report title of ‘Managing mass medical emergency evacuation by air ambulances.’ Secondly all the other observations and lessons learned that I never had imagined gleaning.

I had prepared 3 proformers, one for my self, one my CEO Martin Eede and one for my Air Support Unit Manager Mick Lindley with the questions / facts we could learn. The information learned is included in ‘Additional lessons learned.’
The European HEMS and Air Ambulance Committee (EHAC) strives to create and promote a public perception in Europe to the effect that air rescue and air ambulance services are necessary and that they have certain requirements. EHAC represents the interests of its members with the European regulatory authorities. EHAC makes the expertise of its members available to the bodies involved in drawing up or reviewing regulatory acts (for instance the EU Commission, EASA, JAA). EHAC also pursues the uniform implementation of new regulations, for instance the requirement for the national aviation authorities to audit air rescue and air ambulance operators under JAR-OPS 3. Furthermore, EHAC is devoted to further developing air rescue services and to maintaining high standards of service quality. The primary criteria include flight safety and medical efficacy.

These are the master objectives governing EHAC’s key activities:

- Coordination and cooperation in major disasters
- Development of standards for training pilots, physicians, paramedics and hems
- Development uniform quality standards for HEMS helicopters, air ambulance planes and their medical and non-medical equipment
- Support of research and result analysis
- Introduction of new technologies
- Expanding the scope of missions

The regular AIRMED conferences are another focal point of EHAC’s activity. They provide an international platform for operators and manufacturers. The next AIRMED is 2008 in Prague.

Since the introduction of the air rescue in 1968, Germany has flown over 1 million deployments. Over 375,000 alone by the non-profit General German Automobile Association air rescue. (ADAC) The General German Automobile Association air rescue net covers at present 41 helicopters at 32 locations. In addition the Austrian Suben works in co-operation with the ÖAMTC and six intensive transport helicopter operate in (Greven, Hamburg, Cologne, Mainz, Murnau, Senftenberg). The helicopters are operational daily from 7 o'clock (and/or starting from sunrise) to sunset.

The table show services provided in 2005.

<table>
<thead>
<tr>
<th>Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients assisted</td>
<td>36,300</td>
</tr>
<tr>
<td>Of which patients transported</td>
<td>14,700</td>
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<tr>
<td>Ground transport</td>
<td>6,200</td>
</tr>
<tr>
<td>Air transport/scheduled airline flights</td>
<td>2,400</td>
</tr>
<tr>
<td><strong>Air transport/ambulance flights</strong></td>
<td>1,700</td>
</tr>
<tr>
<td>Miscellaneous (e.g. train, chauffeur service)</td>
<td>4,400</td>
</tr>
<tr>
<td>Medical calls dealt with</td>
<td>186,000</td>
</tr>
</tbody>
</table>
Majax Observations

My Churchill Fellowship travels began with a formal meeting hosted at the ‘LMU Munich University’ with Dr. Erwin Stolpe Chairman of EHAC / Medical director of ADAC and the President of EHAC Christoph Breitenbach.

It became evident very quickly and remained throughout my trip – that my hosts were equally curious about our air ambulance service in the UK and the comparisons. My research therefore quickly developed into a mutual exchange of information where both parties benefited from the Churchill Fellowship.

We discussed the UK government time targets (ORCON) and air ambulance coverage. It became apparent very quickly that there was no formal Majax plan for implementing ADAC HEMS aircraft. Merely an expectation that due to the vast resources available they would simply replicate what they do on a daily basis. The first aircraft on scene would stay – acting as a marker and communications via a built in Iridium satellite phone and a shared emergency services BOS radio to communicate to further aircraft. The German Federal Police along with the Army would lead the major incident ADAC simply becoming a resource to them. ADAC would not become involved with kit retrieval or staff deployment.

From their experience we discussed the train tunnel fire in Austria November 2000 – 100 dead, 5 patients and 10 aircraft on scene. Not a Majax to ADAC due to low casualty numbers. We also looked at the rail disaster in Eschede June 1998. 200kph Vs bridge. 101 deaths, 103 injuries. 4mins first call for help. 4 hours later 1,844 different rescue organisation personnel on scene of which 461 were ambulance staff. 39 aircraft were available on scene. The patients were distributed among 22 hospitals all within 2 hours. An incredible achievement.

Of the 110 operational rescue EMS aircraft, at anyone time there is an a/c within a 50km radius. They are expected to attend within 15 mins but it averages at 8 mins for primary HEMS missions. 30 - 50 % of their work load is trauma based second only to patients with chest pains. Inter hospital transfers are done by separate modified aircraft – both fixed wing and rotary.

In their 30+ year history road traffic collisions (RTC) deaths have been reduced from 24,000 in 1970 to 5,200 in 2004. The reduction being directly accredited to ‘air rescue.’

In Munich on ‘Christoph 1 I spent 2 days on the helicopter covering a population of 2 million. Within a 50km radius there are 11 doctors cars, approx 100 ambulances and 1 HEMS aircraft and 1 Secondary transfer helicopter – the later can be used for primary HEMS if necessary. They are all controlled / dispatched from a central control unit and dispatched via individual pagers and the details passed by radio. The skill mix is 1 pilot, 1 doctor. who rotates from the hospital and 1 seconded paramedic on monthly rotation. They operate a 16 hour day with a pilot change after 8 hours, 07.00hrs to sunset + 30 mins.
Additional lessons learned

The majority of air bases are within hospital grounds. The members of staff ‘live in’ and each bedroom also has a personal study area. The morning team briefing takes place over a very civilized continental breakfast at 07.00hrs. Very enjoyable!

Being in hospital grounds also makes excellent use of the doctors time as they can be on duty within the Emergency Department (ED) and called when necessary – a bicycle is provided. The pool of doctors include surgeons, anaesthetists and ED specialists. All helipads have a purpose built ‘pneumatic fat tire’ trolley push to the ED. Usually the trauma patient is in a vacumat with no additional C-spine control. They use the suction pump to evacuate the air – much quicker than the hand pumps we use.

Once within the ED the department is split into two. One half for medical emergencies the other headed by the ‘Shock room’ or ‘resus’ as we know it better – for trauma. Of the hospitals I visited I was overwhelmed at the efficiency of the building layout. A lift directly to theatre, doors direct into MRI and CT and automatic doors for our entry.

Being located in the hospital grounds also enables staff to make use of canteen, pharmacy, post, linen, equipment technicians and computers – the patient report form (PRF) is typed by the doctors directly into the patients notes from the air base. At midnight daily the ADAC national server correlates statistics.

The full team at Munich consists of 26 doctors and 6 paramedics. 10 training days are held per annum of which you must attend 5. Including 2 compulsory days joint with mountain rescue and 2 helicopters involving winch work. ADAC is similar to our Automobile Association (AA). It has 16 million members of which 31c (22p) of their annual subscription pays for the HEMS service. In a survey the members listed the air ambulance as their highest motivation for joining. If not an ADAC member then their insurance pays at a cost of approx 40 Euro per flying min.

The future is seen as investing in further education for staff, crew resource management being highlighted as a must. All drug administration is physician led, including paramedics assisting RSI, and they act as winch operators. To progress to 24/7 with night vision goggles (NVG) and install HELAS obstacle detection... Munich – ‘Christoph 1’ air base was the first purpose built. It is now over 10 years old and being demolished and rebuilt – completion due early 2007.

I thoroughly enjoyed my observing capacity attending a total of 4 jobs and 9 flights. Memorable highlights include being left in an industrial estate, comforting a 9 year old with a fractured elbow even though I spoke no German! And landing in a narrow street with four story housing either side, which was the designated landing site for an inner city hospital. Also attending a HEMS training evening, with an interpreter was great, the atmosphere of enthusiasm and shared passion was the same as at home.
The Acadian Ambulance Service over the past three decades has grown from a fledgling service with two ambulances and eight medics in 1971 to the largest private ambulance service in the USA.

Acadian began their operation in Lafayette in 1971, a time of crisis. The funeral homes, traditional providers of ambulance service were closing. Today Acadian covers 21,258 square miles, from 106 strategically located stations throughout service area. 1461 highly skilled medics care for emergency and convalescent patients, serving a total of 241,000 patients a year from 205 ground ambulances, at 106 stations, plus seven helicopter ambulances and four fixed wing aircraft. For a population of 3.4 million. Every medic is rigorously trained in the latest procedures, and every ambulance carries the latest in cutting edge life-saving technology.

The company received national recognition for its response to Hurricanes Katrina and Rita, and was praised by President George W. Bush. The president said “the people of Acadian Ambulance Service--and the other first responder agencies who joined them in hurricane rescue efforts—brought an unprecedented level of heroism to the field of emergency response.”

Marc Creswell remembers throwing tuna cans and water bottles at the people clamouring at the helicopter.
"We just started chunking whatever we had," said Marc, who spent nine days hopping from hospital roof to hospital roof as the eyes and ears of Acadian Ambulance’s efforts to evacuate New Orleans area hospitals in the days after Katrina.

It was Marc who I shadowed for a week and who coordinated my visit as a guest of ‘Acadian Ambulance Service’. The activities included:

- 12 hour shift with road crew
- 2 shifts with Paramedic Supervisor – also solo responding, trouble shooting, rota’s, kit retrieval and crew debriefing at local 24/7 coffee house
- ½ day in control
- ½ day in training school – SMART triage packs
- Worked weekend as ‘events cover’ in La Fayette town centre for 4 concerts simultaneously
- Completed my first night HEMS. RTC 5 pts, conveyed child ? broken leg. Given an IV and a flight of 6 mins. Total cost $6,007
- Several shifts with the aircrew – including permanent ‘On call’ during the night

Car park converted into pad
Black Hawk & Coastguard car park
Neonates being evacuated
**Majax Observations**

Shadowing Marc Creswell - Aircrew Paramedic with Honours, made me stand in awe. He shared vivid personal accounts of his activities during the Katrina and Rita hurricanes of September 2005. There was no formal Majax plan with a/c involvement but he achieved approx 2,000 patients movements in 10 days, evacuating 7 hospitals including 32 ventilated patients and 13 babies.

Lessons he learned during a real major emergency:

- Be prepared and if not, be resourceful. He sites being given the empowerment from the top (CEO) to do what he needed to have happen as his biggest asset. Examples include:
  - Knocking down lamp posts on top of a multi-storey car park to enable helicopter to land and patients to be trolley pushed up the ramps from the hospitals.
  - When it came to evacuating the Dome more stretchers were needed, he called and ordered a 100 and sent an aircraft to collect them.
  - Taking critical care neonates out of incubators and placing into boxes 6 at a time to be evacuated by helicopter.
  - Armed with a satellite phone and a clipboard Marc became the mouth piece in the field. 100 miles away at the Acadian air base using a satellite phone to coordinate with his crew mate Tony Cramer, they organized all the flights. A dispatcher collected all the requests from the hospitals as normal and passed them onto the impromptu team.
  - With so many requests Nobo white boards were used to track requests, phone numbers etc. When these were full the windows were used. The nobo boards were covered in plastic to protect evidence and were sealed by police.
  - New Orleans (NO) was 30 mins flying time away from the ASU. A mobile bowser to refuel was invaluable as it removed the need to reposition and reduced refueling queues. Military, Coastguard, National guard, air ambulances and private helicopters all sharing.
  - In a Majax Acadian would not collect doctors or medical teams – just kit.
  - As more and more offers of help came in, as well as requests to evacuate critically ill patients, the team began ferrying patients from car park to awaiting ambulances 3 patients at a time, as opposed to ‘bed to bed’ one at a time.
  - Using his business card Marc simply wrote the co-ordinates and ASU phone number on the back and offered ‘volunteer pilots with a/c’ food, water, fuel and a place to sleep 100 miles away at Lafayette. In return they came back to him, to him to continue medevac’s.
  - Marc explained that 150 Acadian staff were flown in to assist. He himself worked 4 days straight remaining for 8 in total.
  - Rules were broken on a daily basis.
  - At Meadow Crest hospital 30 trees were chopped down by hand axe, to allow a Chinook helicopter to land – this was done at night by the light of car headlights.
  - Becoming more resourceful he commandeered numerous a/c allowing him to hop from hospital to hospital. A back pack his only life line. See appendix for details.
Additional lessons learned

- Additional paramedic skills include: RSI, I.O. by drill adults only and combi tube.
- PPE is very minimal. Wearing uniform cotton shirts and trousers with a baseball cap. Only distinguishing item is a pair of gold armed wings pinned onto shirt. No helmet- just a headset.
- Landing sights are prepared with 4 red flares by trained Fire or Police, especially at night prior to landing. They talk the pilot down as he sweeps the area with the night sun.
- All jobs are sent to individual issue pagers and a built in rugged laptop.
- The method of record keeping is impressive. A verbal handover is given at the ED. On return to base a voice mail message with all the patient details, observations, treatment etc is given over the telephone. This is then typed up by the secretary in normal office hours. A tick sheet is also submitted that itemizes the billing for that patient. I.e. O2, blanket, gauze etc. A further ‘Controlled Substance’ report is also submitted if any drugs are given. A very quick turn around is achieved. Including kit retrieval / replacement from ED, where a dispenser is used for every needle, syringes, mask etc. which is bar code scanned to the patients account.
- Very impressed with the amount of disposable kit including all linen and blankets. The disposable head huggers called ‘multi-grip’ are better than our velcro system which requires rigorous cleaning.
- Public events – golf cart ambulance with longboard/stretcher attachment, to enable access into pedestrians area, stadiums etc.
- On the road the crew take portable O2, kit bag and the stretcher into the house. All patients conveyed on stretcher with O2 and an IV, 2 IV’s if traumatic injuries are suspected.
- 3 stretcher patients can be conveyed by road. The 3rd longboard hung from ceiling by hooks.
- Drivers do not exceed the speed limits, as they have no exemptions, even with light & sirens.
- Every Acadian Employee owns shares in the business. This has a huge effect on team work and moral. Especially at the end of the financial year. ESOP.
- All patients are required to give consent, signing ‘Payment Authorisation & info. Release.’
- Families adopted families – opening up their homes not for days or week but for months. I am astounded at the community spirit still felt.
- I had the opportunity to fly out to an oil rig with Petroleum Helicopters Incorporated (PHI) 100+ miles off shore. I had a brief look at their ‘Emergency Response Guide’. It included – the first hour is the most important. Next few hours are usually unsurvivable. Most of their major incidents are short term – either burnt out or sunk.
- Paramedic of the year – with employee luncheon and guest speakers headed by President George Bush Snr !
- Diversification - Aircraft charted service inc prisoners to hospital facilities, integrated solutions – Medics for off shore oilrigs, Training – National EMS Academy, On call Personal alarm system for the vulnerable, On watch security alarms, Mobile monitoring, tracking GPS.

See appendix 7.4 for article ‘Honorable Mention : The anti-FEMA’. It is about how FEMA and Acadian served during the New Orleans disaster.
On July 3, 1983, MedSTAR Transport began a tradition of providing service to critical injuries and medical cases when its red and white helicopter ferried its first patient, a spinal cord injury from Prince William County, VA. to Washington Hospital Centre. Since then, the program - the first hospital-based air medical service in the Washington area has flown nearly 40,000 patients.

The initial emphasis of the MedSTAR program was to bring trauma patients from serious vehicular crashes in northern Virginia and the District of Columbia to the Hospital Centre. MedSTAR's service portfolio soon expanded to include the interfacility transfer of critically ill patients, initially predominantly trauma patients, from outside medical facilities into the Washington Hospital Centre.

During the next several years, interfacility transports surpassed scene missions as MedSTAR Transport's main emphasis. With the growth of cardiac services at Washington Hospital Centre and the development of its Washington Heart program, the predominant category of transport changed to adult cardiac patients. The next-door neighbour, Children's National Medical Centre, began using MedSTAR Transport for flights for critically ill children and neonates into their facility. Within several years of its launching, MedSTAR Transport entered the regional market for critical care air transport by offering its services to all hospitals in the region. In 1997, ground critical care transport capability was added in response to the need for a comprehensive hospital-based critical care transport program. MedSTAR Transport was certified by the Committee on Accreditation of Medical Transport Services (CAMTS) in 1998.

Washington Hospital Centre purchased its own helicopter in 2000, a single-pilot instrument flight rules (SPIFR) certified EC-135, the first of its kind in the country with a new colour scheme - blue and yellow. A second SPIFR EC-135 was delivered in spring 2001. In March 2003, a third EC-135 went into service and the original BK-117 aircraft was retired. The second BK-117 was refurbished and placed into a dedicated backup role. Currently, the aircraft operate out of bases at three Maryland locations - Charles County, Frederick County and Talbot County providing medevac services to the entire mid-Atlantic region.

Twenty years and a flawless safety record later, MedSTAR Transport has grown into the region's main air medical transport system, with growth in volume during four of the last five years with about 3,200 missions completed in fiscal year 2003.

In May 2003, MedSTAR's communications centre, which was located at Washington Hospital Centre, moved to its new, state-of-the-art facility at Tipton Airport at Fort Meade, Md. The communication centre has access to local and '800' access lines and has telephone links to Children's National Medical Centre, the National Airport Crash Network and the Secret Service. Currently MedSTAR Transport employs a staff of 80 including 14 pilots, 24 nurses, 22 paramedics, 5 mechanics as well as base and communications staff.
Arriving in eager anticipation of this visit I had actually been able to secure an observers seat over the internet on ‘MedSTAR 5’. The observer seat had been booked through a brilliant web site and my confirmation received with very comprehensive instructions. (medstartransport.com)

The Washington Hospital Centre was my obvious choice due to its involvement in the terrorist attack on the Pentagon September 11th 2002. MedSTAR are also the only non military aircraft to be cleared to land within high security ground – for example ‘The White House.’ A direct Secret Services line is available, and that is all they could say about that.

Following introductions to the team we immediately went out on an inter hospital paediatric transfer for a septic 2 year old female. This was completed by road ambulance using the aircrew. The decision is to transport by road if the combined journey time is <20 mins. 85% of the airborne work they do is transfers hence the skills mix of an ICU/ED nurse and a paramedic.

The set up was once again totally different. A hospital based unit, where the staff including the paramedic rotates for one week in six into the ED department. A 5 bed trauma unit with CT attached. This is to keep skills levels sharp. With an average of 365 flights a month skills are maintained at a high level.

**Majax Observations**

- Of all the hospitals in Washington this is the one assigned to handle major incidents.
- The first aircraft on scene would not stay. The four MedSTAR plus other a/c would leap frog one another until all patients were removed.
- They would be tasked by ATC and the local Washington dispatcher. Radios and pagers are used along with an inbuilt satellite phone when necessary.
- A call out procedure is written into their Majax plan. As MedSTAR’s area cover includes VIP’s a copy of the plan could not be released.
- I was able to discuss and take a tour of their Majax preparation and overflow room – directly accessible from the helipads. My guide was the air support manager Christopher Puckett.
- The room included delivery hatches in case of contamination problems, therefore self-contained.
- Note in the picture the smaller helipad is for ‘hot off loads’ and a trolley push into the ED. The helicopter then hover taxis to the larger pad to park / refuel. This remained busy all day.
- The area for Majax is self contained, comprehensive and complete. Not only storing additional equipment – moveable cabinets / pods (airway, decontamination for biological, nuclear and chemical) but also housed stretchers, trolleys, wheelchairs and ventilators all ready to go and surplus to daily requirements.
- Another addition is the multi coloured time clock on the wall able to offer incident duration, count down and stream line information in ticker tape style from comms.
- A video link can be provided via dispatch from the incident to the ED.
Additional lessons learned

- The paper work in completing patient report forms was very time consuming as there are many questions – including insurance details – making the whole process quite impersonal. Everything written was always “Reported as….” Due to the potential of future legal action. However for the database it was simplified – just scanned in.
- Personal Protection Equipment (PPE) in aircraft and on scene was limited. No hard hats in a/c for on scene. Police/Fire paramedics would be expected to extricate. The police a/c is always tasked first.
- PPE once in the ED department was exceptional, including eye protection and routinely worn.
- The a/c is never shut down on scene in case it doesn’t start again. The pilots believe this also encourages a faster turnaround time on scene.
- Paramedics are able to do RSI. Nurse fully conver sant with IV pumps, ventilator settings etc. Excellent use of skill mix for inter hospital transfers.
- Although MedSTAR have 5 a/c 4 are operational with the fifth as back up in case of break down or servicing needs.
- Of the 4 jobs observed, 2 were by road. The space inside the ambulance was amazing, being nearly double the size of a UK, as was the finish, leather interior, air-conditioning, and see through cabinets. The US retain the cab access, lost to the UK through the EEC regulations.
- Once again every thing appeared disposable or had a disposable protector over it.
- The air crew are employed by the hospital. The pilots contracted.
- Aircrew shift 10.00 – 22.00hrs. We arrived on scene at 21.30hrs for an 80 yrs post cardiac arrest x 4 and were unable to stabilise her until 23.00hrs and then flew her back.
- A detail that I did not accompany the crew on was a stabbing in a jail. Facility was made for landing at the prison. The patient was hand cuffed and accompanied by Police.
- Highly unlikely in the UK that either of the later two details would have flown.

Before... 16yrs male RTC v pole (internet) ... and after.
Federal Emergency Management Agency While most emergency situations are handled locally, when there's a major incident help may be needed from other jurisdictions, the state and the federal government. NIMS was developed so responders from different jurisdictions and disciplines can work together better to respond to natural disasters and emergencies, including acts of terrorism. NIMS benefits include a unified approach to incident management; standard command and management structures; and emphasis on preparedness, mutual aid and resource management.

The National Incident Management System (NIMS) Integration Center (NIC) was established by the Secretary of Homeland Security to provide "strategic direction for and oversight of the National Incident Management System (NIMS)... supporting both routine maintenance and the continuous refinement of the system and its components over the long term." The Center oversees all aspects of NIMS including the development of compliance criteria and implementation activities at federal, state and local levels. It provides guidance and support to jurisdictions and incident management and responder organizations as they adopt the system. The Centre is a multidisciplinary entity made up of federal stakeholders and over time, it will include representatives of state, local and tribal incident management and responder organizations. It is situated within the Department of Homeland Security's Federal Emergency Management Agency.

The day I was due to visit it was announced the FEMA was to be disbanded following its failures post hurricanes Katrina and Rita. My understanding is that as an agency they provide the money to make what needs to happen, happen. Because of the vast size and scale of the New Orleans natural disaster there was no one immediately to purchase the assistance from. The outer lying peripheries were willing and able to assist but could not 'get in' logistically or supportively regardless of how much funding FEMA made available. I know this is a sweeping statement but it reflects the opinions of many I have spoken to.

From the FEMA web site I had learned that they had access to a full listing of fixed and rotary Air Ambulances available. They are then categorised into 1-4 types or 'other’. A break down of the team personnel, a/c type, equipment & care provided can be found on their web site fema.gov.

Due to the imminent changes FEMA re-directed me to visit an exhibition looking at Emergency Services provided by the Armed Forces. This was a huge display in front of Capitol Hill. Everything from an air conditioned surgical unit ‘Tent’ to Apache helicopters to fitness testing to join The Marines. (I missed the 70 second chin pull up by 9 seconds because my arms just would not do it. My brain said yes but my arms said no. Never experienced anything like it.) The defense security cooperation agency had good methods of integration, ie between Marine Corps, Special Forces and the Civil assist programme.


Westpac Life Saver Rescue Helicopter

The Westpac Life Saver Rescue Helicopter Service was established by Surf Life Saving Australia in 1973 on an initial sponsorship of $25,000 from the Bank of New South Wales (now Westpac). The Westpac Life Saver Rescue Helicopter Service has three operators in NSW. The Southern Region has bases at Sydney & Wollongong, the Hunter Region at Newcastle and the Northern Region at Lismore on the far North Coast.

With a total of six sophisticated specially equipped helicopters, the Westpac Life Saver Rescue Helicopter Service provides the means to quickly and efficiently deliver emergency medical specialists to the most inaccessible areas of NSW whenever life is threatened.

Every day lives are at risk and every day Westpac Life Saver Rescue Helicopters fly an average of four missions. Some 19,500 missions have been carried out since the initial beginnings with No Cost or obligation to any member of the public who has been transported by the ‘Life Saver’ Rescue Helicopters. It is a Free Community Service whose only purpose is to Save Lives.

Ambulance aeromedical division

The Ambulance Service of NSW, through the NSW Department of Health, has contracts with six medical rescue providers in the State of New South Wales. Each contractor is designated a region of the State and has the option of providing more than one helicopter to their region.

In total there are 9 helicopters currently operating across the State, 6 Category 1 helicopters and 3 Category 2 helicopters.

Category 1 helicopters are twin engine, single pilot and instrument guided (able to fly at night). They have a minimum cruise speed of 120 knots, a rescue hoist, and operate around-the-clock subject to weather. These helicopters can accommodate any type of patient, including premature babies, children and adults and have the capacity to transport two stretcher patients with medical equipment, two medical attendants, a pilot and flight crew. They are also equipped as mobile Intensive Care Units with non-invasive monitoring units, intubation and ventilation equipment including mechanical ventilators. Both categories of helicopters are equipped with in-board oxygen, suction and a comprehensive array of medical and rescue equipment. Cardiac resuscitation drugs and narcotic analgesics are routinely carried along with non-invasive blood pressure monitoring, pulse oximetry, ECG monitoring and defibrillation. Advanced monitoring and therapeutic equipment equivalent to a hospital Intensive Care Unit is frequently carried and used for critically ill patients.
Specialist casualty access Team (SCAT)

The Special Casualty Access Team (SCAT) was first formed in 1986, from the need for paramedic ambulance officers to be able to provide high quality pre-hospital care to patients wherever they are. The roles of SCAT are many and varied including: support to rescue squads, specialist police units (such as the State Protection Group) and fire brigades in Hazmat; bushfires, snow and urban search and rescue; working on helicopters; and accessing and treating patients in caves, canyons, mines, water, and on cliff ledges. SCAT officers are taught to be self sufficient and often ‘camp out’ with their patients when weather or operational conditions dictate a need to ‘stay put’ for a period. ‘Core’ SCAT skills focuses on safety and personal attributes (resilience, adaptability, teamwork & leadership) which is assessed under a range of testing conditions during an 8 week course. Special Casualty Access Team (SCAT) paramedics make up the composition of helicopter crews.

The Service currently has 48 SCAT officers throughout the State. They fulfill the roles carried out by Mountain rescue, Cave rescue, Search and rescue, Royal National Lifeboat Institution, Air ambulance and the Fire services Urban search and rescue. SCAT paramedics receive special training to enable them to perform in extremely difficult and high risk situations.

After a meeting with Dr. Gary Tall I was taken to ‘Lifesaver 1’ airbase and was fortunate enough to take part in the days winch – strop and litter training. The discipline used was paramount, with strict ‘challenge and response’ prompts. We began in the hanger and then out to a secluded peninsular – you can imagine my surprise when A&E Cons. Mike Smith from Harrogate shouted; “Sammy! What are you doing here?”

Majax Observations

- Well practiced with inter related agencies on a large scale mock incident annually.
- For Example: 500 ‘real’ casualties in a building collapse exercise - 2005
- 2 Sydney Harbour ferries taken hostage & tanker explosion - 2006
- Satellite phone and hand held for each aircraft.
- Legislation that all A&E hospitals have an illuminated helipad.
- Procedure for mobile phone company to erect a temporary booster mast. Activation < 2 hrs
- Centrally tasked and coordinated from the AeroMedOPS based in Sydney.
- No additional kit carried on aircraft other than ‘Ambplan’ as for road crews.
- No need was felt to collect medical personnel as each aircraft already carries a doctor.
- An annual budget specifically for Majax training
Additional lessons learned

- 80% secondary ITU retrievals by crew either by Helo/fixed wing or land ambulance.
- 20% MVA/RTC, Bush accidents and water rescues.
- They have a unit 4 by 4 vehicle, donated by the local Rotary.
- SCAT recruitment is every 2 yrs, used to be 4. One 8 week course run every 3 yrs.
- 4 a/c for a population of 4 million in Sydney area.
- Sleep at unit in purpose built but small hanger for two a/c.
- Operate 10 hour days, 14 hours nights.
- Fly 24/7 don’t use NVG.
- Doctors carry out RSI and adult IO.
- A doctor or paramedic always accompanies the patient whilst being winched.
- 80% of work is inter hospital transfers.
- New hanger currently being built at Cape Banks – open 2007.
- New base to include swimming pool to include dunk tank training and a climbing wall.
- Winch capability – line checked every 6 months.
- Personal PPE kit approx $10,000 (approx £4,000). Inc wet suit, helmets, double harness, blue leather jacket, flight suits, personal issue mini diving O2, rescue knife.
- Their Web site includes donation from wage deduction, how to help and an on line merchandise shop. There is also a regularly updated ‘News’ section that includes the most recent cheque presentations.
- ‘Cash Housie’ like bingo have timetabled games advertised on webpage to raise money.

What I also found very unique was the split of the 4 helicopters in Sydney. For the catchment area of approx 2 million people (Total population 20,000,000 in Australia) they had:

1. Adult Primary HEMS
2. Adult Secondary transfers and can do primary HEMS
3. Pediatric <16 years old
4. Isolated head injuries A 3 year insurance company trial already proving its worth in brain recovery and back to work tax paying status. The insurers prefer proactive care as opposed to life long rehabilitation and care costs.

If I could be a paramedic anywhere in the world I would choose Australia – not for the location but to become a SCAT paramedic. Once again I am in awe of the huge amount of additional skills that they have. The wow factor was when I looked at their competency board. These paramedics have to re-qualify in at least one speciality each month.

Note: no stretcher bed Crew I practiced winch ops with SCAT disguised ambulance for police ops
3.4.2 Australia  Health Counter Disaster

New South Wales is at the forefront of the states and territories in its Health counter disaster preparedness. The first of its kind in the nation, with Health and Ambulance personnel working together to address all aspects of disaster planning and response, including response to terrorism.

The Ambulance Service has administrative responsibility for the NSW Health Counter Disaster Unit, which works closely with individual entities within Health such as the Mental Health, Medical Services, Public Health and Communications and other State and Commonwealth agencies. The Unit coordinates policy, planning and education and ensures that the Health system is able to provide an appropriate and credible response to a major incident or disaster at the state level. Visiting with George Smith, Deputy Director of CDU I was able to observe a 3 day Majax exercise that he had planned. The Unit also provides ongoing education and training for Health personnel to facilitate counter disaster management and pre-hospital special operations.

The NSW Health Counter Disaster Unit has provided a response to a range of major incidents, including the Asian Tsunami crisis, Bali bombing (frontline medical assistance at the site and at home in hospital burns units), 2002/03 bushfires and the 2003 Waterfall train accident.

Majax Observations

- Australian Medical Response Team have a totally self contained rescue package.
- Recently responded to Bali bombings 2002 and Tsunami 2004 disasters which in turn -
- Allows their staff to gain experience in real circumstances.
- Mock counter disaster exercises held on an annual basis with separate budget.
- Booklet called ‘Ambplan’ on every vehicle with excellent information& log keeping capabilities.
- Two wave approach. 1st ambulances treat patients on scene. 2nd provide patient transport.
- I recommended the use of SMART triage tags as used in the UK and Acadian USA.

Additional lessons learned  2000 Sydney Olympic Games

- A Majax plan was specifically written for the 2000 Sydney Olympics and already meetings have been held in preparation for the 2012 London Olympics with NSW Health CDU.
- 4 teams of 8 provided 24 hour cover for 4 additional helicopters separate to normal cover.
- Designated landing sites were built 500m from the ‘Games Village’ and Athletics Stadium.
- One ambulance remained within each of the large stadiums due to a 4 hour security check.

After a meeting in Sydney’s central Police HQ I became an official observer. These three photos were taken during the 3 day mock terrorist hostage take over of 2 ferries within the famous Sydney harbour.

Gold command setting up  Police launch I spent night on  Planning team of NSW
3.5.1 Australia Cairns Royal Flying Doctor Service

Since 1928 the Service has grown into one of the most respected organisations in the world. Covering an area equivalent in size to Western Europe, it now operates from 20 Bases, 24 hours a day, 365 days a year. No longer is the RFDS just for the people of the outback. Flying Doctor territory is just one hour’s drive out of most capital cities in Australia.

With the improved condition of roads and facilities in the outback, the Service is also becoming more involved with the ever increasing number of tourists visiting Australia's remote locations.

Established in 1928 and developed on a national basis in the 1930s, the Service soon provided not only emergency medical aid to the people of the Inland, but also a comprehensive health care and community service. The development of the Inland was in many ways made easier by the presence of the Flying Doctor. Previously, serious illness or accident often meant death and the Inland holds many graves of people who might have lived had they been able to receive medical aid quickly enough.

The RFDS was the first comprehensive aerial medical organisation in the world and to this day remains unique for the range of primary health care and emergency services it provides and for the huge area of sparse population and climatic extremes over which it operates - 24 hours a day, 365 days a year. On 15 May 1928, the Aerial Medical Service was established as a one year experiment.

Health Statistics for 2005

<table>
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<tr>
<th>BASE</th>
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<th>PATIENTS ATTENDED</th>
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<tr>
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</tr>
</tbody>
</table>

Visiting the base in Cairnes I was very impressed with the stand-by qualities. Everything ready and checked – on charge – at a moments notice. Unfortunately my visit did not coincide with one of the weekly clinic runs.
Majax Observations

- The RFDS would be tasked in a Majax from ‘AeroMedOPS’ at St. George hospital in Sydney.
- Their key role would be decanting beds i.e. Inter hospital transfers.

Additional lessons learned

- Confiscated Leatherman or Swiss army penknife’s are donated from airport security & sold for AUS $5 each.
- Excellent staging for medical equipment above pts legs – with a single arm that temporarily removes allowing the patient to be slid onto the stretcher.
- Within the a/c hanger is a patient waiting area with bed for planned transfers.
- Formal visitors centre including a static plane, hosted video presentation, museum and shop.
- Monthly glossy magazine –self financing through advertisements.
- Actively seeking bequests and ‘not-for-profit partners.’
- Host an annual gala ‘Spirit of… (whatever province)’ and celebrate fundraisers, heroes, patients and corporate sponsors. Queensland 2005 raised over $430,000.
- Modified cargo door with lifting ramp allowing patient and stretcher to be placed into fixed wing aircraft.

3.6.1 New Zealand  Hamilton  Westpac

The air ambulance has operated in Hamilton since 1987. Since the inception of the Westpac Waikato Air Ambulance service in Hamilton, the number of missions carried out each year has increased substantially with in excess of 6000 patients having been transported - an average of 50 patients per month over the years. The fixed-wing aircraft is used for longer distance flights and is a crucial part of the service. It allows the helicopter to remain closer to the areas where it is most needed.

The Waikato Hospital is New Zealand’s second largest hospital and services the largest region. Many of the smaller, outlying hospitals do not have specialist staff or facilities and therefore utilise the Westpac Waikato Air Ambulance to provide the transport link for patients requiring the specialist services of Waikato Hospital. The hangar is situated in the grounds of the Waikato Hospital thereby requiring only a short stretcher journey between helipad and hospital.
What was totally unique to anywhere else visited was the staffing of the aircraft. The pilots have to live within 5 minutes of the unit and an emergency car is provided. The aircrew, employed by St John, and tasked from their normal duty on the road ambulance, expecting to arrive at the aircraft within 15 mins. All ‘Advanced Paramedics’ are aircraft orientated and carry a flight suit with their PPE. What is even more amazing is that for the town of Hamilton - population of 300,000: there is only one rapid response car and one paramedic ambulance. Take the crew away on the aircraft and the remainder of cover is provided by St. John volunteers. Approx. 40 volunteers are required weekly to provide an ambulance cover in Hamilton.

Majax Observations

- Not written into a Majax plan, but can have 8 aircraft within 1 hour on scene.
- Only one Police aircraft for whole of New Zealand.
- St John ambulance would coordinate and task the a/c as an asset 24/7 from Wellington coms.
- Would be prepared to collect staff and medical kit before transporting patients

Additional lessons learned

- Air support unit built within hospital grounds, they believe ‘There is no other way.’
- 75% of work load is inter-hospital transfers.
- The a/c kit is checked weekly by road crew and they have disposable cardboard splints.
- Long line / fixed rope rescue work – mainly used in water rescue.
- Additional kit carried includes: Scalpels, sutures, fluid warmer, Midazaolam & Amioderone.
- Civil defence emergency plan begins at home – public taught to be self sufficient.
- The Golden hour study by Dr. Tony Smith and article ‘Scientific fact or medical urban legend.’
- Suicide rate amongst New Zealanders are second only to Japan.
- Fundraising includes 6 full-time telemarketers based at the ASU. They promote ‘Friends of the Air ambulance.’ For $40 (£20) a 12 month subscription for all same household occupants will be repatriated any where within New Zealand once medically fit. They also receive a car bumper sticker and 2 newsletters. Of funds raised 87% to aircraft 13% administration costs.
- Westpac Bank provides sponsorship, therefore logo and livery, plus all banking.
- Pilots do presentations to groups who fundraise – ‘The Old Boys Club’
- Annual open day at base with all a/c, stalls, education etc.
St John provides ambulance services for approximately 85% of New Zealand's population. Each year, 700 paid and 2200 volunteer St John Ambulance Officers care for and save the lives of thousands of New Zealanders and visitors to the country.

All St John Ambulance Officers are trained under a nationally accredited training programme. After achieving the National Certificate in Ambulance (Patient Care & Transport), they progress through intravenous and cardiac qualifications to become St John Paramedics. Ambulance Officers who complete the National Diploma in Ambulance (Paramedic) then become Advanced Paramedics.

The St John Ambulance Service operates 24 hours a day, seven days a week. Conventional ambulances, four-wheel drive vehicles, motorcycles and helicopters ensure St John will arrive rapidly. Our services are controlled and directed to the site through Regional Communication Centres that despatch and coordinate all the emergency land, water and air ambulance services in the region.

It was an unexpected bonus to crew up with the only paid response car and road crew covering the whole of Hamilton (Population of approx. 300,000) Attending several jobs I was amazed to learn that the land ambulance crew became the ‘Aircrew’ when a task came in. All advanced Paramedics have a flight suit in their kit bag. My impression was of a highly motivated ‘Volunteer’ team, vehicles were impeccable. A very interesting and up to date meeting was held at St. John HQ with CEO Eddie Jackson. Part of my orientation included a visit to ICU and met several of the team that provide the care during inter-hospital transfers.

**Majax Observations**

- Regionally coordinated.
- New plan has been written awaiting approval – unfortunately unable to have a copy.

**Additional lessons learned**

- Most service personnel begin their career with approx 4-5 years as a volunteer.
- Air crew are paramedics taken of road vehicle and tasked to aircraft.
- St John Ambulance operations are funded by: Contracts with the Accident Compensation Corporation (ACC) and the Ministry of Health.
- Patient part charged for medical emergencies.
- Community donations, fundraising and contributions from a range of commercial activities.
- Totally self contained First Aid package including personal ‘face mask’ for resus doll.
3.7.1 Thailand Phuket Red Cross

On 26 December 2004, one of the worst natural disasters in living memory devastated vast swathes of South Asia. A huge earthquake off the western coast of Sumatra, Indonesia, triggered a massive tsunami that swept away coastal villages and seaside resorts around the Indian Ocean. More than 230,000 people were killed and hundreds of thousands more were injured or left homeless.

Two years on, the relief effort continues to repair the damage caused by the tsunami. Governments and aid agencies are constructing new houses and infrastructure, and many of the people caught up in the disaster are once more earning a living.

Throughout the year, the Red Cross has worked with communities to better equip them for future disasters, training at-risk communities in disaster response and setting up a network of volunteers who can broadcast early warning messages to their communities. The organisation has helped communities identify safe areas and built raised platforms for people to retreat to during floods or a tsunami.

The following 3 photos were collected whilst visiting NSW counter disaster unit (3.4.2) The motto of the volunteers and the Thai staff was: "We WILL bring them home, we promise". This was written everywhere on banners and t-shirts and was the promise to all the relatives and friends of the victims.

Majax Observations

- Military led air support and ground operations.
- Massive support from other countries e.g. Australia, NSW counter disaster response team.
- Blue evacuation routes to high ground are now signposted. Interestingly only in English.

Additional lessons learned

- Had I realised that there was a National 3 day celebration for the Kings 60th year of reign maybe my timing could have been better. I was unable to gain access to the Red Cross Head Quarters in Bangkok and the language barrier won.
3.8.1 Yorkshire Air Ambulance Charity

Our Lifesaving Service

- Provides rapid response of helicopter to scene of incident.
- Rapid paramedic care to the patient within the crucial 'Golden Hour', with the aim of attending to critical cases within the 'Platinum Ten Minutes'.
- Swift transfer to the most appropriate dedicated treatment centre, free of road congestion.
- Swift inter-hospital transfer of seriously ill or injured patients.
- High level of patient comfort, especially relevant to head, neck, back and spinal injuries.
- A single helicopter can provide cover across a large area and be airborne within minutes.
- Air Ambulances can often access areas that are difficult or impossible for road ambulances to reach quickly and smoothly, i.e. coastal, rural or mountainous areas.

Our Aircraft

The MD 902 Explorer is a new generation twin engine aircraft that will provide YAA with significant improvement to its service. The main advantages of the MD902 over the Bolkow 105, which it replaced, are with its Pratt and Whitney 206E engines. With a full tank of fuel an endurance of two hours and top speed of 154mph can be achieved.

The explorer including the Pilot and two paramedic crew can also carry a casualty on the stretcher plus two other seated passengers whether they are walking casualties, next of kin or doctors. The 52 inch side doors and unique sliding stretcher mount enables the crew to load the patient from side of the aircraft.

The MD902 does not have a tail rotor instead it uses the NOTAR® Anti-Torque system to stabilise the aircraft. This system plus the main rotors and engine exhausts that are significantly higher than the Bolkow make the MD902 a much safer helicopter to operate around. The NOTAR system also has the added benefit of making the MD902 the quietest aircraft of its class in the world.

Our Crew

The aircraft works with a crew team of 2 paramedics and 1 pilot at any one time. The paramedics are all taken from the Yorkshire Ambulance trusts (Formerly known as SYAS, TENYAS & WYMAS). The pilots are provided by Medical Air Services (MAS). Occasionally the crew is complemented with a BASICS Dr. It is the skill and expertise of this team that makes the Yorkshire Air Ambulance a life saving service. They regularly support the fundraising activities of the charity which always adds a strong element to any event.

(The photo was taken whilst I was on my fellowship.)

Our Dedicated Air Desk

1st October 2005 saw the commissioning of the first Dedicated Air Desk (DAD) at Yorkshire Air Ambulance ASU. It enables the monitoring of all emergency ‘999’ calls throughout the region. Manned by two experienced control staff they deploy the aircraft. Not only has the DAD reduced activation time from 8 down to 3 minutes it has reduced the number of inappropriate tasking and stand downs.

Using the latest mission management system the location of an incident can be plotted, printed out and the nearest hospitals with their specialities can be given to the air crew in seconds. Combined with ‘Easy task’ the DAD can watch in real time the aircraft position and provide a full database of all operations.

I believe the DAD will be a supreme advantage in coordinating the management of mass medical emergency evacuations by air ambulances. Already the DAD dispatcher has tasked multiple aircraft to the same incident.
Our Majax Pouch

Using a clockwise direction from 12 o’clock the Majax pouch includes a ground to air radio, bottle of water, chest pouch housing permanent and biro pens a compass for wind direction. A mobile phone with photographic capability, head torch, ear protection, tabard and a flip chart set of instructions that have already been amended from lessons learned from this Fellowship experience. A hospital landing site directory and a luminous spray can to mark out a temporary landing site. It is envisaged that the hand help portable satellite phone would also be used by the air support officer.

The ‘SMART pac’ is a well designed and thought out triage tool. It gives the ultimate practical solution to effective on scene triage. By holding the key triage equipment for forward incident personnel it initiates a systematic and thorough response to the scene, all the Yorkshire region ambulance services carry them and are backed up by the larger incident management pac.

Our role of HEMS at a Majax

The aircraft can fulfil multiple roles during the course of a major incident, the nature of which would be depicted by the type of disaster:

- **Tactical scene assessment from the air**
  On initial approach to the scene the aircraft is ideally placed to perform a detailed reconnaissance of the entire scene. From a tactical point of view (Silver Command), this information can be vital for establishing effective command structures and communications.

- **Deployment of Paramedic crew to scene – Difficult or remote access**
  Initial command from the ambulance service (Forward Incident Officer/Bronze Command) can be established in any remote location and effective communication links can also be set-up.

- **Deployment of further Ambulance/Emergency personnel to scene**
  Rapid situation reports can allow Ambulance control to send appropriate resources, including external agencies such as the Fire Service, Police, and Mountain Rescue etc. The aircraft can also be used to transport specialists from these agencies to the scene if it is in a remote location.

- **Deployment of Medical/Surgical/Trauma Teams to scene**
  Similarly, Medical Teams from hospitals away from the location can be flown to scene. The speed of transfer by air means that Accident and Emergency Medical Teams can be flown from hospitals outside of the initial catchment area of the incident, leaving the closer hospitals fully staffed.

- **Delivery of medical equipment/supplies to scene**
  Again, the aircraft can be effectively used to ferry supplies to scene if there are no patients to be transferred.
• Rapid transportation of time critical patients to designated hospitals
Due to the speed of the aircraft, patients can be transferred to hospitals rapidly from the scene of the incident. In addition, the flexibility of the aircraft also means that patients do not necessarily have to be transferred to the nearest receiving hospital, but can be flown further a field to ease the pressure on the nearest receiving hospitals.

First aircraft on scene
The first aircraft on scene at a major incident or potential major incident will communicate a precise situation report from its elevated position above the scene and on scene in relation to:

- Major Incident (actual incident or to initiate standby procedure)
- Exact Location (six figure ordnance survey grid reference from GPS)
- Type of Incident
- Hazards (actual or expected)
- Access & Egress
- Number of Casualties (dead and alive)
- Emergency Services (on scene and required, including medical team)

Drop in Air Support Officer ASO
This officer essentially one of the Aircrew Paramedics would be responsible for allocating and identifying patient destination to available aircraft on scene. The ASO will initially liaise with the acting Bronze Commander, however if no ambulance resource is available, will immediately begin rapid scene assessment and site organisation. On site communication between Ground to Air and Air to Air will be via nationally recognised Scene of Search Frequency 123.1

Role of the Air Support Officer ASO
Initially to organise the scene of the incident
- To work closely with and along side the Ambulance Incident Officer (Ambulance Silver Commander) to ensure most appropriate use of aircraft and crew. (In certain circumstances this may be the Forward Ambulance Incident Officer – (Bronze Commander)
- To provide a communication link (ground to air) between the scene and attending aircraft
- To co-ordinate the movement of aircraft both on approach and on the ground, ensuring optimum use of resources
- To ensure the safety of aircraft and crew by relaying information regarding hazards in or around the incident
- To liaise with incoming aircraft identifying the most appropriate landing site(s), and mark them accordingly
- To ensure that safe working practices are employed in the loading and unloading of aircraft. (Bearing in mind that not all staff attending the incident will have aircraft training)
- To co-ordinate and supervise the loading of patients
- In liaison with AIO/MIO and Ambulance Clearing Station Officer, determine which patients are best suited to movement by air. This to be determined by the need for rapid transportation, the need for transport to a specialist unit
- To co-ordinate the movement of specialist equipment to (and possibly from) scene e.g. Air Shelter, Decontamination Unit, Major Incidents Pods. To ensure the safe unloading of such equipment
- To co-ordinate the transportation of Medical Teams, to and from the scene, where this is more appropriate by air than by road

The Air Support Officer must not become involved in patient treatment or transportation, nor used to fulfil any other role where this would detract from his/her core role.
Action of First Aircraft on Scene
After dropping off Air Support Officer, aircraft lifts and provides information to communications e.g. access, egress, exact geographical location. Acting on information from the ASO, the pilot may be asked to identify and land the aircraft at a temporary landing site using it as a marker for additional incoming aircraft.

Role of First Aircraft on Scene
- Confirms arrival at scene with ambulance control and/or the Airdesk
- After dropping off the ASO, lifts to give overview of incident
- Maintains communication with the ASO
- Relays information from the ASO to ambulance control and/or the Airdesk
- Acting on information from the ASO, picks up Medical team/Equipment or acts as a visual marker for incoming aircraft

Role of First Aircraft on Scene (Landing Out)
Paramedic No 1
Assume the role of Air Support Officer (ASO), in the event of no other suitable member of the Ambulance Service on scene. The establishment of two way communications between all other services on scene and making contact with the relevant officers in charge of each of the Emergency Services via their mobile control units if on scene or their relevant control point.

Paramedic No 2
To remain with Paramedic No 1 and assume the role of the Ambulance Incident Officer, until relieved by a more senior ambulance officer.

Pilot Role
Set up as appropriate the communication channels with Radar and Air Traffic Control. Also to liaise and communicate with other aviation related agencies, such as Search and Rescue, Coastguard, Police Air Support unit and other HEMS aircraft. The pilot is also responsible for the security of the aircraft and identifying performance parameters when on the ground and may if time allows take photographs or video footage of the scene. The pilot can then begin to plan which hospitals landing sites would be appropriate for the task, having received information from the Aircraft Coordination Officer.

Collection of Medical Team and or Major Incident Equipment
On the recommendation of the Air Support Officer, after initial scene assessment. The aircraft would be deployed to pick up either
- Medical team.
- Air Shelter 15ft x 12ft.
- Decontamination Unit.
- Major Incident Equipment Pods.
Aircraft Response to a Major Incident

Ambulance Service
Contact Air Desk on 0123 456 789

OR

Air Desk
Despatch

Get an ETA,
Clear/Available

Less than 5
Minutes

Aircraft
Off
Line

NO

More than 5
Minutes

If unavailable
record in the
incident log

Missions within
Yorkshire, Contact
Neighbouring Air
Ambulances

North West Air Ambulance
Tel: 0123 456 789

West Midlands Air Ambulance
Tel: 0123 456 789

Great North Air Ambulance
Tel: 0123 456 789

Lincs & Notts Air Ambulance
Tel: 0123 456 789

When contacting other air
support units and outside
agencies be prepared to give
exact grid Co-ordinates of the

Missions outside
Yorkshire offer
requesting service
alternative Air
Operation, for
them to contact

Additional Air
Ambulances needed
MULTIPLE CASUALTIES

MAJOR INCIDENT
Contact
RAF Co-ordination
centre: 0123 456 789
FAX: 0123 456 789

WY Police Air
Support
SY Police Air
This is a guideline adopted by all CHAS members in the UK. (Apologies for the quality)

Another document in July 2006 has been proposed by the UK Search and rescue operators group, titled ‘Deployment of Air Assets’ It proposes that in all SAR flights ‘Aeronautical Rescue Co-ordination Centre’ (ARCC) will inform the relevant Ambulance and Police control units.
4. Summary & Conclusions

The Churchill Travelling Fellowship has enabled me to gain global experiences by living and working alongside other airborne pre-hospital care specialists in ways not possible through letters, conversations or email.

I stand with a firm conviction that Paramedics are like minded people, doing the same job, for the same reason, with the same smile on their face, knowing that they are making a difference. We are the same the world over.

Regrettably it is only the lack of agreement to achieve a global protocol standard that prevents us from actually helping each other anywhere on earth. It was good to discover that we in the UK are in some instances ahead of the rest of the world in recognising the need for a plan in ‘Managing Mass Medical Emergency Evacuations by Air Ambulances.’ I felt it was important to include The Yorkshire Air Ambulance Service Charity into my report as an area of study as it was the challenge to develop and integrate the role of HEMS aircraft into Majax plans that prompted the Fellowship application.

Some countries have no plan, either as individual aircraft or working together. This did surprise me – I had wanted to go out and bring back a proven plan. A ‘No plan’ strategy had become a theory, post 9/11 the example was Air traffic controllers landing all aircraft globally in 3 hours with no procedure or ‘plan’ in place. In reality all the air support units that I visited expressed a keen interest in my findings and have requested copies of my report.

There is a need to standardise a method of keeping one another safe whilst attending mass casualty incidents, to design a plan similar to the physical human structure; strong, coordinated yet flexible, that can be integrated into any Majax plan.

James T. McKenna editor-in-chief of the monthly magazine ‘Rotor and Wing’ suggested including civilian and commercial helicopters in a Majax situation. Writing post hurricane Katrina disaster he said;

“Two things are needed after this and any similar disaster: more helicopters and a plan for using them. The sad thing is that plenty of them are available, but responders don’t know that and, therefore, don’t use them. The Gulf coast for instance, has scores of helicopters that are used to ferry crews to and from offshore oil and gas rigs.

Not all can be used for rescue, but those aircraft can carry food and water and critically needed medical aid to those in need. Military and government helicopters can be, and typically are supplemented by scores of private and commercial copters.

But rarely is that done by design. Only on a very limited scope, such as in New York after the 9/11 attacks, have federal disaster managers integrated private helicopters into their response plans. Most of the time, private helicopters still are volunteered by their owners on an ad hoc basis.

Do back ground checks on crews if necessary: deputise them if we must…. But do not allow them to go unused while thousands suffer too much for too long.”

We must never underestimate our own skills and abilities, truly the grass isn’t greener, just various different types and shades all enhancing one another. As I mentioned previously it became evident early on and remained throughout my trip – that my hosts were equally curious about our air ambulance service in the UK and the comparisons. My research therefore quickly developed into a mutual exchange of information where both parties will benefit from The Churchill Fellowship.
5. Majax recommendations

1. Evoke an environment of preparedness to include:
2. Reduction, Readiness, Response & Recovery.
3. Have a plan. Although there is now an argument for a ‘No Plan’ strategy. 9/11 All aircraft worldwide were on the ground in three hours. Air traffic controllers made it happen.
4. Needs to be dynamic and strategic.
5. Practice the plan. Full integrated use of all emergency services in ‘real’ time. Best practice Australia NSW CDU.
6. Plan needs to include de-confliction strategies.
7. TCAS installed on all HEMS, SAR, Coast guard and Police aircraft.
8. The major incident plan should be ‘a work in progress’ It should be reviewed and updated annually based on deficiencies identified in simulated, actual use, or if there are organizational or technological changes.
9. Communication is the key.
10. Satellite phone communication ground-to-air and coordinating desk / control as Acadian.
11. Have one point of co-ordination on scene that can communicate with one point of coordination at base/gold command/EOC. SPOC Single point of contact as used by Acadian Service.
12. Have all air ambulance assets tasked from one place. Best example Australia ‘AeroMedOPS’
13. Adopt and standardise the use of CHAS ‘HELP guideline no. 6
15. Utilise and expand the role of a dedicated Airdesk as demonstrated by YAA. Possibly regionally coordinated or centrally.
16. Make arrangements for your ambulance service mobile phone provider to erect temporary booster mast near the incident scene.
17. Portable refuelling system / bowser that could be positioned at the incident – reducing costs, flight times, and increasing the amount of patient movements possible.
18. Having a large regional hospital with direct access from helipad with night and refuelling capabilities. Best example Washington Hospital Centre.
19. Using the latest technology verbally record each action, rational and decision onto voice activated digital dictation recorder. Easier than pen & paper (FOD reduction) still log a/c.
20. If safe to do so ‘Fly over’ the scene prior to landing for a full scene assessment.
21. Police helicopters are expert at ground to air link with visual data. A good plan could include the police designated to do this and provide live footage to comms.
22. Horizon scanning – looking ahead, what is likely to come up, risk assess and mitigation.
23. Include in log decision rational – state facts and if changes state why. No opinions.
24. In protracted incidents there needs to be a plan for relief staff.
25. It is important to keep a ‘local professional’ on scene at all times.
26. A method for integrating and governing the use of civilian and commercial helicopters in a catastrophic majax.
27. Back pack contents – Marc Creswell, during hurricane Katrina. His uniform after day one was substituted for cargo shorts, ‘camel’ 2 litre water pack, body amour and a baseball cap.

<table>
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<tr>
<th>Mobile GPS</th>
<th>Police collapsible baton</th>
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<tr>
<td>Satellite phone</td>
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6. Executive Summary

Abstract

Introduction
How does an ordinary aircrew paramedic get to travel around the World.

Discussion
Set out in chronological order, each country visited has four areas of focus:

   1. Facts about the service providers visited
   2. How time was spent with them
   3. Majax observations
   4. Other lessons learned

My goal was to learn of the best methods experienced in
“Managing Mass Medical Emergency Evacuations by Air Ambulances.”

Germany
EHAC
European HEMS and Air Ambulance Committee.
Met with EHAC President at Munich University. Discussed the utilisation of
aircraft at a majax. Compared Ech sede rail disaster, and tunnel fire in Austria.

ADAC
Spent two days flying with ‘Christoph 1’ and sharing lessons and experiences
not only of HEMS but ambulance work, hospitals and funding.

USA
New Orleans
Acadian
Lived in ambulance station for a week. Attended paramedic of the year lunch
with Pres. Bush snr. Landed on a oil rig 100 miles off shore, in the Gulf of
Mexico. Excellent comms/control of mass evacuation 2,000 patients in 10 days.

USA
Washington
MedSTAR
Dedicated Maj ax hospital and provision for dealing with VIP’s. Excellent
helipad and handover method. Enjoyed an ‘Observers seat’ aboard MedSTAR

FEMA
Visited ‘Public Services provided by the Military’ exhibition, everything from an
air-conditioned surgical tent to a Sternal intraosseous gun.

Australia
Sydney
Lifesaver 1
Shadowed the retrieval team manager. Visited the dedicated coordination and
control desk of all air assets. Attended winch training at air base with SCAT.

Counter Disaster
Attended NSW ambulance training school and joined in a counter terrorist
training exercise – 2 passenger ferries hijacked and a tanker explosion next to
the Opera House! 3 days. Learned of contingencies used in Sydney Olympics.

Australia
Cairns
Royal Flying Doctors
Looked at the fixed wing side of air evacuation and different fundraising ideas.

New Zealand
Hamilton
Westpac Waikato
Concentrated on inter hospital transfers and decanting in a majax scenario.
Total different approach to staffing.

St. John
Looked at volunteer coordination and career progression to aircrew.

Thailand
Bangkok
Red Cross
Military aircraft only. Supported by international agencies including NSW CDU.

Summary
Learning how to manage mass medical emergency evacuations by air
ambulances through proven methods already used in a majax. I also gained
knowledge and experienced so much in ‘Pre hospital care’ around the world.

Recommendations
Have a simple National standardised plan used by all medical air assets via
one co-ordination control with satellite communication. ‘See p26 ‘Our role of
HEMS at a Maj ax.’

33
## 7. Appendix

### 7.1 Acknowledgments & contact list

<table>
<thead>
<tr>
<th>COUNTRY</th>
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<td>Rowland Gedhart</td>
<td>Paramedic</td>
<td>Christoph1 EC 145 BK 117</td>
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<td>Munich</td>
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<td>EHAC / ADAC</td>
<td>Dr. Med. Erwin Stolpe</td>
<td>Chairman / Medical Director</td>
<td>Christoph1</td>
<td><a href="mailto:Erwin.stolpe@med.uni-munchen.de">Erwin.stolpe@med.uni-munchen.de</a></td>
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<td></td>
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<td>America</td>
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<td>Acadian Ambulance Service Inc.</td>
<td>Marc Creswell</td>
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<td>Christopher Puckett</td>
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<td>Retrieval Registrar</td>
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<td>Jacita Felsch</td>
<td>Head Nurse</td>
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### 7.2 World map of tour

![World map of tour](image_url)
7.3 Flight Itinerary

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As government officials dawdled, Richard Zuschlag didn't miss a beat. He sent his medics into flood-ravaged New Orleans, where they rescued more than 7,000 people. At some point in the wake of Hurricane Katrina, after the winds had passed and the levees had snapped, Children's Hospital in New Orleans found itself in deep trouble. The city's electricity was long gone and the hospital's neonatal unit was running on back-up generators. The only option was to airlift the babies to safety.

Fortunately, Marc Creswell, a flight-training officer for Acadian Ambulance Services in nearby Lafayette, had become an expert in the construction of makeshift helipads. He bulldozed a fence at a field next to the hospital and set up an outdoor generator and a series of lights. Then Creswell and a team of Acadian colleagues and hospital nurses began ferrying sick infants in their incubators to the landing area. Healthier babies were rushed out in their bassinets. When they ran out of those, Creswell found some cardboard boxes, wrapped the babies up tight and loaded them six to a helicopter.

Flight services coordinator Michael Sonnier kept the six choppers moving. Four hours later, more than 30 infants were nestled safely in nearby hospitals. An exhausted Creswell grabbed a few hours of sleep. Then he headed to the next mission.

Richard Zuschlag president of Acadian owes much of his success from a longstanding paranoia about losing communications. Acadian has 18 500-foot communications towers and a large supply of satellite phones, and Zuschlag makes sure his backups have backups. After Katrina wiped out the communications infrastructure of New Orleans, Acadian had the only reliable radio system in the region. As a result, Zuschlag was aware of the extent of the damage to the region before local, state, and federal officials were.

While the bureaucrats bickered over who was authorized to do what, Zuschlag didn't hesitate. Holed up in the command centre at Acadian's headquarters, he stationed medics on the roofs of New Orleans's six hospitals to help evacuate patients, staffed a first-aid station in the Superdome, and established a triage centre on the Interstate 10 causeway, serviced by Acadian's fleet of 200 ambulances. In the skies, the company's eight helicopters joined 90 other aircraft sent by first responders and military units nationwide, the entire fleet coordinated by Acadian's dispatchers.

The hurricane hit on Monday. By Friday, the company had helped evacuate more than 7,000 people from the flooded city's hospitals. Reports from the field were almost absurdly heroic. At Memorial Hospital, Acadian medics encountered a ward of critically ill elderly patients with no medical records. Working fast amid the chaos, they duct-taped patients to ironing boards and doors ripped from their hinges, and lifted them into waiting helicopters. "Our goal," Zuschlag says, "was to do whatever we possibly could until a higher power came along."

An astute Louisiana National Guard colonel recognized the same thing and charged Acadian with directing hospital rescues. Thus began a series of 18-hour days in the command centre, as Zuschlag dispatched medics, cajoled bureaucrats, encouraged exhausted employees, and generally strove to keep everyone's head above water. "Everyone works together to orchestrate our ambulance service," says Sonnier. "Richard makes sure we don't feel like we are on our own, but we also don't have to fight through red tape once we've been tasked." When Zuschlag wasn't directing rescue efforts, he worked the phones, demanding action from politicians. A call to a local congressman helped clear some bureaucratic roadblocks Acadian's crews were encountering. During an appearance on Fox's The O'Reilly Factor, he made an urgent plea for reinforcements. When Laura Bush visited the region, he asked the First Lady to relay to her husband that it would take the full strength of the military to clear out the city's hospitals. Zuschlag's not taking credit, but the next morning, the troops arrived--almost five days after Acadian dispatched its first helicopter.

With the reconstruction of New Orleans well under way, Zuschlag says he remains somewhat in awe of his employees. He can't resist telling heroic tales of Acadian's troops, such as the one about the senior manager who redirected three empty 18-wheelers to Charity Hospital and filled the trailers with stretchers laid out end to end until 68 patients were evacuated. "Most people gave up because it was the biggest nightmare they'd ever seen," Zuschlag says. "But my people are great doers and wouldn't take no for an answer."
7.5 Acadian Disaster Plan (Mass Casualty Incident & Disaster Response)

This was the most up to date Majax plan I was able to review. I particularly liked the level 1-5 responses according to casualty numbers. Reading the Mass casualty response policy v2004.03 revealed that the EMS commander should in a list of 1-11

Coordinate Air Med efforts, including if possible a ‘fly over’ to fully assess the scene.

Acadian Ambulance Service – Revised Majax plan – post Katrina and Rita -08.03.06

Purpose
Throughout the Acadian Ambulance service area, there exists a significant potential for disasters with mass casualties to occur. The presence of a multitude of industrial sites, major air traffic, school and commuter transportation, and the frequent occurrence of weather disasters such as hurricanes and tornadoes are ever present risks for mass casualty incident(s).

Policy
Acadian Ambulance Service will implement the disaster plan to optimize the use of available internal and external resources to effectively manage these challenging events.

Scope
This disaster plan addresses emergency actions as they apply to Acadian Ambulance Service and its large geographical response area. For the purpose of this policy, the term disaster will include any incident that results in a high destructive impact that may affect both AASI and its coverage area and includes any event that may result in damage to critical infrastructure and may or may not result in mass casualties. This includes both open and closed events. It provides for mitigation, preparedness, response, and recovery operations. This basic plan has a broad framework and describes the approach to emergency management, planning, and operations using the incident command system. This disaster plan will insure a systematic approach that enhances inter-operability and communications between AASI departments and other agencies.

This disaster plan is a flexible document. It is recognized that changes from the contents of this plan can, and will, occur due to the unique nature of emergencies. Any deviation, using initiative and common sense, is both authorized and encouraged to adapt to the specific emergency and to ensure employee and public safety.

Plan Development and Maintenance

This disaster plan is to be considered a work in progress. It will be reviewed and updated annually based on deficiencies identified in simulated, actual use, or if there are organizational or technological changes.

- The Chief Operations Officer (COO) or his designee will maintain and update this plan as required and will coordinate an annual review and revision effort as necessary.
- Department heads should recommend changes at any time and provide information periodically about changes of personnel and available resources. Department heads and cooperating agencies have the responsibility for maintaining internal plans, standard operating procedures (SOPs), and resource data to ensure prompt and effective response to disasters.
- Any revisions to this disaster plan will be posted on the intranet and notification sent to all departments assigned responsibilities in the plan. Receipt acknowledgements of revisions will be required.
- Contact names and telephone numbers (i.e. EOC staff, departments, special facilities, other agencies and hospitals, etc.) are maintained by appropriate area commands and are updated quarterly. A copy will be maintained by the Communications Center and distributed to all management and supervisory staff.
- The COO or his designee has the overall responsibility for ensuring emergency planning, coordination of resources, and provision of direction of disaster operations.
- In order for a plan to be effective, its contents must be known and understood by those who are responsible for its implementation. The COO or his designee must brief departmental heads and other appropriate officials of this plan.
- This plan applies to the entire corporate entity, including its subsidiaries.
- This plan will be activated each June in the form of a simulated emergency, regardless of actual events, in order to provide practical controlled operations experience to those who have EOC responsibilities and/or Area Command responsibilities.

Phases of Disaster Management

This plan is concerned with all types of disasters. It also establishes the activities that occur before, during, and after emergency operations. These activities are accomplished by dividing emergency management activities into the following phases

Mitigation: Activities and actions taken to prevent or reduce the occurrence of any emergency or risk to human life and property. Examples of mitigation efforts include, but are not limited to:

- Ensuring offices are up to building codes
• Disaster insurance
• Procurement and integration of equipment
• Identifying resources and obtaining mutual aid agreements
• Annually reviewing of Memorandums of Understandings (MOUs) and mutual-aid agreements
• Annually reviewing of employee immunization records
• Public education

**Preparedness:** Activities and actions taken prior to the disaster that will facilitate the implementation of a coordinated response. Examples of preparedness efforts include, but are not limited to:
• Continuity of business plans
• Testing and maintaining equipment
• Establishing, equipping, and maintaining an Emergency Operations Centre (EOC)
• Participating in training, drills, and exercises
• Developing disaster plans and procedures
• Providing the appropriate immunizations to employees
• Hazard and threat assessments

**Response:** The activities and actions taken immediately before, during, or directly after a disaster to save lives, minimize damage to property, and increase the effectiveness of recovery efforts. Examples of response include, but are not limited to:
• Activation of the EOC
• Use of the incident command system and Medical Incident Command system
• Use of START triage in mass casualty care
• Use of SMART triage packs and tags upon their arrival and as available
• Assistance in the evacuation of nursing homes, hospitals, and service members as resources allow
• Activation of a disaster casualty collection points
• Activation of mutual aid agreements or MOUs if response exceeds internal available resources

**Recovery:** The phase that involves restoring systems to normal. Short-term recovery actions are taken to assess damage and re-establish vital infrastructure systems; long-term recovery actions may continue for years. Examples of recovery actions include, but are not limited to:
• Damage assessment
• Debris clearance
• Critical Incident Stress Management (CISM) defusing(s), debriefing(s), and counselling
• Temporary housing for employees
• Prophylactic medication administration of employees
• Hazard and threat assessments

*Termination of Recovery phase will be determined by the Chief Operations Officer and his advisors and he will issue an order terminating it.*

**Notification and Activation of Disaster Plan**

**Procedure**

Once the Communications Centre receives notification of any potential disaster the Communications Supervisor will determine what level to activate in response. This decision will be based and driven by attempting to obtain the following information:
• Estimated number of injuries
• Determine if an incident is open (unstable) or closed (stable)
• Determine level of response
• If multiple agencies are responding in conjunction with AASI resources determine which agency is in charge of the scene and name of person in command
• Identify the location of command centre
• Identify name of AASI Medical Incident Commander
• Determine if incident requires activation of the Emergency Operations Centre (EOC), Area Command, or both
• Use information in the annexes if applicable to type of incident

**Level 5 Response (Estimated 5-10 injuries)**

**Communications Centre’s Responsibilities**

• Send appropriate number of ambulances and resources from the immediate or adjacent dispatch zones
• Send appropriate sprint vehicle and/or closest Paramedic Field Supervisor (PFS) or supervisor equivalent (i.e. Field Training Officer, Air Med medic, or Education Coordinator)
• **Send Air Med if needed (consider multiple helicopter response).**
• Call for and send other resources as needed (i.e. First Responders, Fire Department, Hazmat, etc.)
• Consider Mutual Aid Assistance from other EMS providers, both public and private
• Notify area hospitals, area Vice President-Operations (VPO), Operations Manager (OM) of area, and Quality Improvement Manager. This may be done through the MCI urgent voicemail distribution list.
• Consider notifying Safety Manager if possible Haz-Mat scene
• Consider notification of media

**Level 4 Response (Estimated 11-25 Injuries)**

**Communications Center’s Responsibilities**

In addition to the actions outlined in a Level 5 Response:
• Notify all area hospitals, COO, and Chief Medical Officer (CMO)
• Consider notification of media through Public Relations and Marketing department
• Notify Employee Relations Specialist for activation of CISM
Level 3 Response (Estimated 25-50 Injuries)
Communication Center’s Responsibilities

In addition to the actions outlined in the previous Level responses:
• Consider activation of an Area Command by consulting with area VPO, OM or his/her designee
• Consider private or public transportation vehicles such as buses, wheel chair van services, etc. to assist in transporting those patients tagged as “green” category patients
• Notify all VPOs

Level 2 Response (More than 50 Injuries)
Communications Center’s Responsibilities

In addition to the actions outlined in the previous Level responses:
• Contact area OM or his/her designee and activate Area Command Post

Level 1 Response (More than 100 Injuries or Expected Injuries)
Communications Center’s Responsibilities

In addition to the actions outlined in the previous Level responses:
• Notify the Louisiana State EOC if activated and coordinate response efforts

Voicemail (VM) Notifications

The notification of the executive and management staff via an urgent voicemail shall include the following information:
• Location and type of incident, including response level
• Number of estimated casualties and categories of patient dispositions if possible
  o Dispositions to be used are Immediate (Red), Delayed (Yellow), Minimal (Green), or Expectant (Black)
• Those resources dispatched
• Medical Incident Commander’s name, unit, and location
• Any actions required by recipients of VM
• This voicemail should be followed by a status update after the termination of the incident

Activation of EOC

The activation of the EOC may be determined by the Communications Center Supervisor. In the absence of EOC activation the Communication Centre Supervisor will act as the main coordinator between command in the field and resources until relieved. This decision will be based on the type and level of the incident or expected event.

 Hurricanes are events that present significant warning before impact. The status of the EOC activation sequence will be as follows if any of the Acadian Ambulance coverage is in one of the following levels per NOAA recommendations.

• Hurricane Watch - All EOC personnel placed on standby
• Hurricane Warning - Partial activation of EOC
• Hurricane Impact - Full activation of EOC
• Hurricane Recovery - Continued response activities as needed

Activation of Area Command

The activation of the Area Command may be determined by the Communications Center Supervisor or the EOC Commander. In the absence of Area Command activation the Communication Center Supervisor will act as Area Command until relieved and provide the main coordination between command in the field and resources. This decision will be based on the type and level of the incident or expected event.

 The status of the Area Command activation sequence will be as follows if the area of impact is within the Area Command’s district and is in one of the following levels per NOAA recommendations:

• Hurricane Watch - All Area Command personnel of potential area to be impacted are placed on standby
• Hurricane Warning - Partial activation of Area Command of potential area to be impacted
• Hurricane Impact - Full activation of Area Command of area impacted
• Hurricane Recovery - Continued response activities as needed

Organization and Assignment of Responsibilities

Emergency Operations Center (EOC): Facility designed to serve as a company support center and represents a physical location where the coordination of information and resources to support the disaster incident management activities of the Area Command and Medical Incident Command Post.

Command Structure

• Command: May be held by the COO or his designee. The AASI Communications Supervisor will hold this position until the EOC is activated and functioning. Command has the overall responsibility for command, control, and communications of emergency planning, coordination of resources, and provision of direction of disaster operations. The commander will hold all positions in the EOC system until he/she appoints them as span of control dictates.
• Public Information Officer (PIO): May be held by the Vice President of Public Relations and Marketing or his designee. The Public Information Officer has the responsibility of coordinating all media relations and shall liaison with any Joint Information Center (JIC) if one or
more have been activated. This is to ensure the same message and information is released to the public and keeps consistency within any press release(s). This will keep confusion, panic, and possible hysteria a minimum and to enhance the public’s confidence and safety through accurate and timely information. Any press release(s) will follow HIPAA compliance regulations.

- **Safety Officer**: May be held by Health Safety Environmental Manager (HSE) or his designee. The responsibility of the safety officer is to ensure the health and safety of all AASI resources and their patients.
- **Liaison Officer**: To be designated (TBD) by the COO or his designee. The Liaison Officer is responsible for assisting AASI in communications and coordination with other agencies involved in any disaster response.
- **Information and Intelligence Officer**: May be held by Sr. Vice President of Communications and Information Systems or his designee. The Information and Intelligence Officer is responsible for communication and coordination of sharing information, intelligence, including security and classified information and operational information to identify risk. This information shall be shared with the appropriate Area Command and/or Medical Incident Command posts as well as any information that should be relayed to other outside agencies having interest in the disaster response.
- **Administration/Finance Officer**: May be held by the Vice President of Finance or his designee. The responsibility of the Administration/Finance section is to monitor and track the expenses of the disaster response(s) and maintain expense records. It is also the responsibility of the Administration and Finance section to assist Logistics in acquiring resources that are not usually kept in stock and may need to be ordered and requested.
- **Logistics Officer**: May be held by the Materials Manager or his designee. It is the responsibility of Logistics Officer to support the resource needs of Area Command(s) and Medical Incident Command(s).

- **Planning Officer**: May be held by any Vice President of Operations or TBD by COO. The Planning sector responsibility is to coordinate with Area Command(s) and Medical Incident Command(s) in prioritizing the response phase of the disaster plan and Incident Action Plan(s). When providing this coordination and assistance the EOC Planning sector shall remember that in any plan developed the priorities are life safety, incident stabilization, and preservation of property in that order.
- **Operations Officer**: May be held by any Vice President of Operations or TBD by COO. Operations responsibility is to coordinate and assist Area Command(s) and Medical Incident Command(s) in performing the disaster response and to assist in accomplishing the goals and objectives outlined in the Incident Action Plan.

**Functions of the EOC**

- Resource support to various incident sites:
  - Resource requests
  - Resource tracking
  - Resource allocation
  - Demobilization
- Management of information and data:
  - Safety and weather information
  - Damage assessments
  - Incidents in progress and status
  - Public information
  - Mutual-aid resources
  - EOC staffing charts
  - Road and transportation status
  - Hospital bed availability
  - Equipment status
  - Other agencies involved
  - Security information

**Area Command Post (ACP)**: Facility designed to serve as a company regional or parish support center and represents a physical location which the coordination of information and resources to support the Medical Incident Command posts within its region.

**Responsibilities and Functions**:

- Sets overall incident-related priorities at the regional/parish agency level
- Assigns critical resources according to the established priorities
- Ensures proper management and handling of incident
- Ensures proper and effective communications
- Ensures all incident management objectives are met and that there are no conflicts with each incident or with company policies
- Identifies critical resource needs and relays request to the EOC
- Provides for safe operating environment of personnel and personnel accountability

**Structure**

- **Area Command (AC)**: To be held by the VPO for area affected, Operations Manager (OM) or their designee
  - The AC will hold all positions in the Area Command system until he/she appoints them as span of control dictates
  - It is the responsibility of Area Command to command, coordinate, and prioritize the resources with Medical Incident Command(s)
- **Area Logistics Chief**: Appointed by AC
  - It is the responsibility of the Area Logistics Chief to supply and/or request resources in support of the priorities outlined by the Area Command to the disaster
- **Area Support Positions**: Appointed by AC
  - The responsibilities of Area Support Positions will be relayed and outlined by the Area Command as needed and demanded by the disaster response
- **Area Planning Chief**: Appointed by AC
  - It is the responsibility of the Area Planning Chief to assist Area Command and Medical Incident Command(s) in developing plans for the disaster response and prioritizing the resources needed in the response
  - The Area Planning Chief will keep the priorities in the order of life safety, incident stabilization, and preservation of property.
Medical Incident Command Post (MICP): site designated to serve as a local scene support center and represents a physical location
which the coordination of information and resources towards incident management activities. The MIC also directs all activities at the actual
incident in regards to patient care. Once the Sprint Truck arrives with the SMART Triage packs the commander will ensure that the vest are
donned by the appropriate officers and may utilize other tools provided by this resource. In the event of a high impact disaster and/or
multiple incidents within an area more than Disaster Casualty Collection Point (DCCP) may be needed. Each DCCP will have a separate
Medical Incident Command Post and will coordinate through the Communication Centre or Area Command Post when activated.

Structure, Functions and Responsibilities

- **Medical Incident Commander (MIC):** To be held by first paramedic on scene and may hold position until relieved by at least a supervisor
  or equivalent (i.e. Field Training Officer, Air Med Medic, or Education Coordinator, etc.) The responsibilities are to perform scene size-up
  “Hot Lap” of incident, contacts AASI Communication Centre establishes as command, requests additional resources as needed, and
develops an Incident Action Plan (IAP). In developing the IAP command will consider the priorities of life safety, incident stabilization,
and preservation of property in that order. However, the commander must remember that his responsibility lies in patient care issues of
triage, treatment, transport, and the safety of his/her responding resources. The commander will hold all positions in the Medical
Incident Command system until he/she appoints them as span of control dictates. The Commander shall also liaison or appoints a liaison
officer with other responding agencies.

- **Triage Officer:** To be held by any level Emergency Medical Technician. The responsibilities of the triage officer includes ensuring that the
START triage protocol is followed in prioritizing all patients initially, provides command with status reports consisting of the number of
patients and their disposition. AASI’s Triage Officer will ensure the patients are sorted into one of the four tiers outlined in the MCI protocol.
Those tiers are immediate, delayed, minimal, and expectant. The triage officer will assign a Treatment officer if the operation will be
sustained on scene for more than 30 minutes and as resources are available. The Triage Officer will coordinate the movement of patients
into the appropriate treatment sectors.

- **Treatment Officer:** The treatment officer when assigned may be held by at least a Basic EMT except in extended operations in which
patients may be on scene for greater than 30 minutes and as resources allow the most experienced paramedic. He/she will ensure
adequate patient care is administered as resources allow. Treatment officers should weigh their patient treatment decisions with
consideration to the available resources (i.e. advanced airway management will pull more resources that may be better used elsewhere.)
This position also entails providing secondary triage according to the SMART triage tags as guidance to assist in determining which patient
in each sector should be transported first. In the absence of the SMART triage system the medic shall use his/her best judgment and
experience to accomplish this task. Treatment officer will coordinate the movement of patients to the transportation sector and provide
command with updates.

- **Transportation Officer:** May be held by any level EMT. It is the responsibility of the transportation officer to coordinate transportation and
distribution of patients to appropriate hospitals with the Hospital Coordinator and document patient movement. The priorities of patient
transports follow the mnemonic ID-ME. Immediate patient(s) go first, Delayed patient(s) second, Minimal patient(s) third, and Expectant will
be handled per the policy of the area parish coroner(s). Lastly, the transportation officer will provide command with status updates.

- **Hospital Coordinator:** May be held by any dispatcher in the AASI Communications Center. The Hospital Coordinator will assist with
tracking patient distribution to area hospitals. Communicate with all receiving area hospitals with the status of the incident and notify the
hospitals of the termination of the incident. Hospital Coordinators will provide status reports to command and treatment officers.

- **Staging Officer:** May be held by any level EMT. The designation for the Staging Officer should be reserved for large scale MCLs requiring
multiple unit responses. The Staging Officer will locate and set up a staging area for all responding AASI resources. He/she will ensure easy
access and egress from the disaster site and to prevent traffic congestion of the responding vehicles. He/she will locate an area to stage
equipment and personnel; tracks unit arrivals and deployment from staging. The Staging Officer releases resources for deployment when
ordered by command/transportation officers to prevent premature commitment of resources.

Additional Considerations and Support Positions for Disaster Response Operations

- **Rehabilitation Officer:** May be held by any EMT or delegated to a member of an ancillary responding agency (i.e. Red Cross) with CISM
experience. In disaster operations in which there is an extensive scene time of operations or adverse weather extremes such as heat or
cold, a rehabilitation sector should be set up for responding personnel to rest and recuperate. This area should be established away from
exhaust fumes, crowds, and extreme noise where possible. The Rehabilitation Officer will request and ensure the needs of rest, fluids, food,
and other creature comforts should be afforded where possible. This position also entails monitoring the responders for signs of stress and
may begin the CISM defusing process. • **CISM:** CISM will be provided for all AASI personnel involved in a disaster response or MCI event
and shall be coordinated by the Employee Relations Specialist after the event in as timely a fashion as possible and the situation dictates.
All AASI response personnel will be strongly encouraged but not forced to attend debriefings.

- **After Action Review (AAR):** Due to AASI’s large geographic area and the numerous employees that may be involved in any disaster
response, it is not always feasible to bring everyone together as one group to complete an AAR. To accomplish the task of an AAR in a
timely manner any AASI employee involved in a disaster response will be sent an e-mail with a link to the 360° survey along with an
explanation of the importance of responding and that their participation and responses are anonymous. This information shall be compiled
by the Quality Improvement Manager. The Quality Improvement Manager shall decide if any other actions shall be necessary such as
designating a committee to review and make recommendations to modify the disaster plan or to incorporate into annual education.
The Winston Churchill Memorial Trust

The Winston Churchill Memorial Trust is a living tribute to Sir Winston, whose example is the inspiration for all travelling Fellows.

He died in 1965 and many thousands of people, in respect for the man and grateful for his inspired leadership, gave generously to a public subscription to fund Travelling Fellowships. All British Citizens resident in the UK are eligible for the annual awards.

The Fellowships are to enable men and women from all walks of life to acquire knowledge and experience abroad. In the process, they gain a better understanding of the lives and different cultures of people overseas and, on their return, their effectiveness at work and their contribution to the community is enhanced greatly.

Churchill Fellows can be of any age and in any occupation. Everyone has an equal chance; a lack of qualifications is not a bar to an award as every application is judged on the worth of the individual and the merit of the project.

Applicants should demonstrate that their project is feasible and worthwhile, and of benefit to their community and to the UK on return.

Past award winners have included nurses, artists, scientists, engineers, farmers, conservationists, carers, craft workers, artisans, members of the emergency services, sportsmen and women and, of course, disabled people. The Trust is a Registered Charity (No. 313952) and the web site is wcmt.org.uk

HEMS Aircraft

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7.8 Abbreviations / Definitions

a/c aircraft
ASU Air Support Unit
BASICS Voluntary on call doctor service for accidents and emergencies
BHAM British Helicopter Advisory Board
Casevac Evacuation of a causality in an aircraft
CHAS Confederation of Helicopter Ambulance Services
CRM Crew Resource Management
DAD Dedicated air desk. Based at YAA ASU tasks the aircraft to jobs
Dr. Doctor
ED Emergency Department (casualty, A&E)
EMS Emergency medical services
EOC Emergency Operations Centre (where a Majax is coordinated)
FOD Foreign object damage/debris - anything that can be blown or harm helicopter
Hot off load When unloading a patient out of helicopter with the rotor blades still running
IFR Instrument Flight Rules – the ability to fly at night
ITU Intensive Care Unit
Majax A major incident is any emergency that requires special arrangements
Medevac Evacuation of a medically ill patient by an aircraft
NVG Night Vision Goggles
Ops Operations – an event, as opposed to surgical procedure
ORCON Government target. 75% of all category ‘A’ emergency ‘life threatening’ calls require a trained medical professional and kit to be on scene within 8 minutes.
Pt. Patient / casualty
RSI Rapid Sequence induction – A procedure used to enable the intubation of a pt.
R&R Rest and relaxation
SPOC Single point of contact.
SYAS South Yorkshire Ambulance Service Trust
Now amalgamated into ‘Yorkshire Ambulance Service’
(YAS) includes West, Tees East and North Yorkshire
TCAS Traffic Collision Avoidance System – piece of kit that alerts pilot to another a/c
WCMT The Winston Churchill Memorial Trust
YAA Yorkshire Air Ambulance Charity

7.9 Web sites

Acadian acadian.org
ADAC adac.de
EHAC ehac.net
Emergency planning – Queensland emergency.qld.gov.au/emq
Federal Emergency Management Agency fema.gov/
MedSTAR medstartransport.com/index.php
Smart triage pack tsgassociates.co.uk
Red Cross redcross.org.uk
Royal Flying Doctors flyingdoctor.net/default.htm
Saint John stjohn.org.nz
Westpac emergency planning waikatoregioncdemg.govt.nz
Winston Churchill Memorial Trust wcmt.org.uk
Yorkshire Air ambulance yorkshireairambulance.org
Yorkshire Ambulance Service nhs.uk/England/AuthoritiesTrusts/Ambulance
7.10 References


Lippincott Williams & Wilkins, Inc (2000) *Eschede facts*

Confederation of Helicopter Air Ambulances (CHAS ) (2004) ‘Help’ guideline number 6, attachment A

Ambulance Service of New South Wales (2005) *Ambplan Major incident / disaster log*


7.11 Thank You

My father Christopher C.H. Wills For his inspiration, encouragement and love.
And for the constant reminder of Winston Churchill’s belief:
‘With Opportunity comes Responsibility’

Winston Churchill Memorial Trust Director General: Air Vice-Marshal Nigel Sudborough CB OBE.
Interview panel Air Chief Marshal: Sir Peter Harding, GCB DSc FRAeS CCMI
Lady Baroness Masham of Ilton
MP Robert Key

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Miss Sarah Inspiring me to strive onward
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